

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

Conditional Major Draft Permit No. F-01-031

MERIDIAN ALUMINUM PRODUCTS, INC.

ISLAND, KENTUCKY

AUGUST 18, 2001

SIEW NONG LIM, REVIEWER

Plant I.D. #21-149-00036

Application Log #54016

SOURCE DESCRIPTION:

Meridian Aluminum Products, Inc. (hereby referred to as Meridian) submitted an application to modify the existing secondary aluminum smelting plant in Island, Kentucky. The existing 10.0 MMBTU/hour rotary furnace (emission point 001(EP01-A)) and associated caster (001(EP01-B)) will be kept while the existing small rotary furnace will be removed. Meridian proposes to add 3 rotary furnaces (002(EP02-A) - 004(EP04-A)), each rated at 7.9 MMBTU/hour, and 3 associated casting operations (002(EP02-B) - 004(EP04-B)). Aluminum dross (005(EP05)) is received and stored in covered bins in an enclosed storage building while aluminum scrap (006(EP06)) is kept in a storage area outside. Emissions from dross and solid scrap load-in, storage, and handling are considered fugitive. Dross and aluminum scrap are charged and melted in the rotary furnaces. Fluxing is performed with chloride-based flux salts. The molten aluminum is cast into ingots (sows) and poured into crucibles. Emissions from the furnaces and associated casters are captured by a 98% efficient hood and controlled by exhaust stream lime injection systems (85% control efficiency) and 4 baghouses (99.9% control efficiency). The furnaces use oxygen-enriched natural gas fuel and no.2 fuel oil as a backup fuel. Slag or saltcake (007(-)) generated within the furnaces is cooled, broken into large chunks, and temporarily stored within the production building before being sent to an approved landfill. Emissions from saltcake cooling, processing, and loadout are considered fugitive. Another source of fugitive emissions is the fugitive dusts generated by vehicular traffic on the unpaved haul road (008(-)).

COMMENTS:

On September 25, 2000, the Division received a construction/operating permit application from Smelter Service Corporation (hereby referred to as SSC) for a secondary aluminum source in Hardinsburg, Kentucky. The application was logged complete on November 20, 2000, and a conditional major permit F-00-032 was issued on February 21, 2001. Due to unforeseen circumstances, SSC has decided not to construct in Hardinsburg, but to purchase the existing Meridian (AFS ID #21-149-00036) in McLean county and add new affected facilities. On June 26, 2001, SSC submitted an application (log 53929) for addition to the existing Meridian plant, but since SSC does not yet legally own the source (21-149-00036), the application log 53929 was officially withdrawn on August 7, 2001. A new application (log 54016) was submitted by Meridian on July 26, 2001, for the aforementioned construction, with the intent of a change of ownership from Meridian to SSC some time in the future.

This permit is a conditional major for HCl and synthetic minor for particulate. The permittee is required to test for particulate, visible, HCl, and D/F emissions. The following summarizes the applicable regulations:

- 401 KAR 52:030 – Federally-enforceable permits for non-major sources. Applies to source-wide HCl emission.
- 401 KAR 53:010 – Ambient air quality standards. Also, applies to potential odors from fugitive

ammonia emissions from dross and saltcake.

- 401 KAR 59:010 – New process operations. Applies to particulate and visible emissions from each affected facility.
- 401 KAR 63:010 – Fugitive emissions. Applies to fugitive particulate emissions from furnaces, casters, dross, aluminum scrap, saltcake, and haul road.
- 401 KAR 63:020 – Potentially hazardous matter or toxic substances. Applies to source-wide HCl emissions and fugitive ammonia emissions from dross and saltcake.
- 40 CFR 63 Subpart RRR – National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production. Applies to D/F emissions from each group 1 furnace and SAPU.

EMISSION AND OPERATING CAPS DESCRIPTION:

Emission caps are as follow:

Emission Point	Pollutant	Allowable	Applicable Regulation
<ul style="list-style-type: none"> • 001(EP01-A, B) Rotary Furnace #1 • 002(EP02-A, B) Rotary Furnace #2 • 003(EP03-A, B) Rotary Furnace #3 • 004(EP04-A, B) Rotary Furnace #4 • 001(EP01-A, B) - 004(EP04-A, B) Secondary Aluminum Processing Unit (SAPU) 	<ul style="list-style-type: none"> • HCl (source-wide) • Particulate / Opacity • D/F (TEQ) 	<p>HCl:</p> <ul style="list-style-type: none"> • Source-wide HCl emission shall not exceed 9.5 tons/12-month rolling average. Self-imposed to preclude 401 KAR 52:020 – Title V permits. • No owner or operator shall allow any affected facility to emit potentially hazardous matter or toxic substances in such quantities or duration as to be harmful to the health and welfare of humans, animals and plants. <p>Particulate/Opacity:</p> <ul style="list-style-type: none"> • For each emission point, the particulate emission allowable is 2.84 pounds/hour, 12.46 tons/12-month rolling average. • For each emission point, the opacity shall not equal or exceed 20%. <p>D/F:</p> <ul style="list-style-type: none"> • D/F emissions shall not exceed the limits specified in the applicable regulations for each group 1 furnace and each SAPU. 	<p>HCl:</p> <ul style="list-style-type: none"> • 401 KAR 52:030 • 401 KAR 63:020 <p>Particulate/Opacity:</p> <ul style="list-style-type: none"> • Self-imposed to preclude 401 KAR 51:017 • 401 KAR 59:010 <p>Fugitive particulate:</p> <ul style="list-style-type: none"> • 401 KAR 63:010 <p>D/F:</p> <ul style="list-style-type: none"> • 40 CFR 63 Subpart RRR §63.1505 (i)(3) • 40 CFR 63 Subpart RRR §63.1505 (k)(3)
<ul style="list-style-type: none"> • 005(EP05) Dross Aluminum • 007(-) Saltcake/Slag 	<p>NH₃</p>	<ul style="list-style-type: none"> • At any time when 1 volume unit of ambient air is mixed with 7 volume units of odorless air, the mixture must have no detectable odor. • No owner or operator shall allow any affected facility to emit potentially hazardous matter or toxic substances in such quantities or duration as to be harmful to the health and welfare of humans, animals and plants. 	<ul style="list-style-type: none"> • 401 KAR 53:010 • 401 KAR 63:020

<ul style="list-style-type: none"> 005(EP05) Dross Aluminum 006(EP06) Scrap Aluminum 007(-) Saltcake/Slag 008(-) Unpaved Haul Road 	Particulate	<p>The particulate emission allowable is:</p> <ul style="list-style-type: none"> 1.02 pounds/hour, 4.48 tons/12-month rolling average. 0.50 pounds/hour, 2.18 tons/12-month rolling average. 1.08 pounds/hour, 4.73 tons/12-month rolling average. 4.15 pounds/hour, 18.18 tons/12-month rolling average. 	Self-imposed to preclude 401 KAR 51:017
--	-------------	---	---

Operating caps are as follow:

Emission Point	Pollutant	Operating requirement	Applicable Regulation
<ul style="list-style-type: none"> 001(EP01-A, B) Rotary Furnace #1 002(EP02-A, B) Rotary Furnace #2 003(EP03-A, B) Rotary Furnace #3 004(EP04-A, B) Rotary Furnace #4 001(EP01-A, B) - 004(EP04-A, B) Secondary Aluminum Processing Unit (SAPU) 	<ul style="list-style-type: none"> HCl (source-wide) Particulate D/F (TEQ) 	<p>HCl:</p> <ul style="list-style-type: none"> The permittee shall not charge flux salt in quantities that will cause HCl emissions to exceed 9.5 tons/12-month rolling average. The maximum flux rate and lime use rate shall be determined during compliance demonstration tests. Self-imposed to preclude 401 KAR 52:020 – Title V permits. Persons responsible for a source from which hazardous matter or toxic substances may be emitted shall provide the utmost care and consideration, in the handling of these materials, to the potentially harmful effects of the emissions resulting from such activities. <p>Fugitive particulate:</p> <ul style="list-style-type: none"> The permittee shall comply with applicable standards in Section 3 of the application regulation. <p>D/F:</p> <ul style="list-style-type: none"> The permittee shall comply with applicable operating requirements specified in the applicable regulation. 	<p>HCl:</p> <ul style="list-style-type: none"> 401 KAR 52:030 401 KAR 63:020 <p>Fugitive particulate:</p> <ul style="list-style-type: none"> 401 KAR 63:010 <p>D/F:</p> <ul style="list-style-type: none"> 40 CFR 63 Subpart RRR §63.1506
<ul style="list-style-type: none"> 005(EP05) Dross Aluminum 007(-) Saltcake/Slag 	NH ₃	Persons responsible for a source from which hazardous matter or toxic substances may be emitted shall provide the utmost care and consideration, in the handling of these materials, to the potentially harmful effects of the emissions resulting from such activities.	401 KAR 63:020
<ul style="list-style-type: none"> 005(EP05) Dross Aluminum 006(EP06) Scrap Aluminum 007(-) Saltcake/Slag 008(-) Unpaved Haul Road 	Particulate	The permittee shall comply with applicable standards in Section 3 of the application regulation.	401 KAR 63:010

PERIODIC MONITORING:

Periodic monitoring requirements are as follow:

- i. The type and monthly amount of aluminum feed to rotary furnaces.
- ii. Perform a qualitative visual observation of the opacity of emissions from each stack or vent on a monthly basis and maintain a log of the observation
- iii. The type and monthly amount of flux salt throughput.
- iv. The type and monthly amount of dross throughput to emission point 005(EP05).
- v. The type and monthly amount of scrap throughput to emission point 006(EP06).
- vi. The monthly amount of saltcake/slag throughput to emission point 007(-).
- vii. The monthly total vehicles miles traveled for emission point 008(-).
- viii. The monthly hours of operation of each emission point.
- ix. The applicable periodic monitoring requirements in 40 CFR 63 Subpart RRR §63.1510.

OPERATIONAL FLEXIBILITY:

None.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.